

TESTIMONY OF HENRY VAUX, JR.
ON H.R. 3561
BEFORE THE SUBCOMMITTEE ON WATER AND POWER
COMMITTEE ON NATURAL RESOURCES
U.S. HOUSE OF REPRESENTATIVES
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Mr. Chairman, my name is Henry Vaux, Jr. and I am Professor of Resource Economics at the University of California, Riverside. For the past ten years I have also served as Associate Vice President, Agriculture and Natural Resources, of the University of California System. I am also immediate past chair of the Water Science and Technology Board of the National Research Council. I must emphasize that I testify here on my own behalf and my views should not be interpreted as those of the University of California.

At the outset I want to thank you for the opportunity to testify here today in support of H.R. 3561. This bill is directly responsive to the very serious water problems which the United States faces in the early decades of the 21st century. Population growth, economic growth and the widespread recognition of the need to maintain and enhance aquatic ecosystems will create very significant challenges for the nation's water resource managers. These pressures increase at a time when there are important transitions underway in the water management arena. Dams are proposed for decommission and removal. Scientific research hints at potential changes in the hydrologic cycle and changes in hydrologic variability. While the changes that characterize this transition might seem to make the problems of addressing the new water realities more difficult, they may in fact present many new opportunities in the form of scientific and technological breakthroughs

The fragmented federal policies that governed water resources research and management throughout most of the twentieth century will probably be inadequate to foster the development of needed water-based technologies and the development of more comprehensive knowledge of the aquatic environment. The traditional strategy of constructing dams and canals to capture and store water so that it can be used at times and places where it is needed is no longer as attractive as it once was. The most desirable damsites have already been developed. Those that remain are difficult and costly to develop and often quite remote from places of use. The public financing of large civil works for water supply is also far more difficult not only because of the higher costs but because of the competition for public funds which is now far more intense than it was in the heyday of dams and canals. In addition, we now understand that dams can do significant harm to riverine environments and the costs of such damages are themselves quite large.

In the future, new surface water storage and conveyance systems are likely to be only a minor part of the mix of strategies needed to address the challenge of intensifying water scarcity. The management of water demand, whether through pricing, education and/or technology, will have to be a significant component of the response to intensifying water scarcity. Water recycling and reuse, already a major means of augmenting supply in the very arid portions of the county, will have to become more widespread both to meet growing demands for water supply and to ensure that receiving water quality is maintained and enhanced.. (two periods) Modern pollution control policies will be needed and those policies should reflect the fact that waste sinks - land, air and water - are interrelated and cannot be managed in isolation. And, there will be a need for development of new water supply technology, including desalinization technology as well as new methods and techniques for managing ground water .

The problems of devising new and innovative means of augmenting water supplies and managing water demands will be made more difficult by the need to manage water resources in ways that provide adequate **water** for non-consumptive uses. Non-consumptive uses, which are sometimes referred to as instream uses, include environmental and recreational uses, navigation, the generation of hydroelectric power and flood control. Thus, for example, much remains to be done by way of restoring the integrity of aquatic ecosystems so as to preserve and maintain ecosystem services and environmental stability. Flood control and flood management are continuing challenges as evidenced by the high flows on the middle Mississippi last week. Energy generation and transportation are likely to remain is **(an)** important water management objectives. This means that ways will need to be found to achieve appropriate allocative balances between water for consumptive use and water for instream or **non**consumptive uses.

There is evidence that existing science is inadequate to address the water problems of the 21st century and better science is going to be required if these problems are to be effectively addressed. Thus, for example, experience with modified flow regimes on the mainstem of the Colorado River, new interest in restoring the historical flows of the Missouri River and a major national commitment to restore the Everglades all reveal the need for substantially more science.

In the summer of 2001 diversions were halted in the upper portion of the Klamath River basin of Oregon and California in an effort to protect several endangered species. The decision to halt diversions resulted in significant economic damage to a number of water users. Yet, scientific peer reviews ultimately revealed the scientific information upon which the decision to halt diversions was based to be inadequate. Clearly, better science is needed on which to base the water policies which will be needed to guide in solving these types of problems in the future.

Recently the Water Science and Technology Board of the National Research Council published a water resources research agenda for the twenty-first century. That publication delineates the major scientific research effort that will be needed to develop the knowledge necessary to formulate a set of science based water policies for the United States. The report emphasizes three main themes:

- The challenge of solving the nation's water problems will require a renewed national research commitment.
- Water quality and water quantity need to be thought of in an integrated fashion.
- Relatively more attention needs to be given to innovative ways of organizing our water institutions.
- Environmental issues will remain a very important part of the water resources management agenda.

These and other recommendations form of **(a)** blueprint of the kind of research needed to underpin an effective national water policy. Although the research agenda is ambitious and will require significant federal investment it must be addressed if future national water policies are to be based on adequate science. Yet, this is not all that must be done.

In the last twenty years, federal water policies - particularly those related to the management and development of water resources - have fallen into disarray. To a very large extent, the responsibility for water management and development has been left *de facto* to the states. Even the federally supported monitoring programs have been reduced in recent years despite the fact that water and water quality data are

essential if water problems are to be accurately characterized and enlightened strategies for solving them are to be formulated. For several reasons, the fashioning of water management and development strategies needed to solve the nation's water problems is not likely to be particularly effective if left exclusively to the states. First, states do not have the financial resources necessary to develop and rehabilitate the needed water infrastructure. Second, state boundaries almost never coincide with watershed boundaries thereby leading to watershed management policies that are either partial or fractionated. Third, frequently there are circumstances in which the states have an incentive to compete with each other in an effort to make themselves attractive to new industry. Often these same incentives lead to a diminution of water quality or to overallocation of scarce water resources. For all of these reasons, the federal government needs to reassert a strong role in the management and development of water policy.

A Twenty-First Century Water Policy Commission of the sort envisioned in H.R. 3561 is an obvious first step in reestablishing strong and comprehensive federal water policies to guide the nation in addressing its water problems. The objectives spelled out in Section III (2) represent an appropriate basis upon which to develop for a stronger set of federal water policies. Strong research and monitoring programs are clearly prerequisite but a comprehensive array of policies covering all manner of water and water related problems are also needed. It has been almost thirty years since the last comprehensive treatment of national water policy. Some of the recommendations issued by the National Water Commission in 1973 are as timely today as they were then. Many of the others are now outdated. The circumstances of today are far different than they were in 1973. The water problems of today are even more challenging and complex than they were in 1973. It is time for another Commission to make a thorough examination of our current situation and make recommendations for an integrated set of national water policies. The Twenty-First Century Water Policy Commission proposed in H.R. 3561 would be an appropriate body to do this.

Mr. Chairman, I appreciate the opportunity to appear here and I hope that your subcommittee will act favorably on H.R. 3561. Thank you.